

## **INSPECTION AND MAINTENANCE AGREEMENT FOR STORM WATER BEST MANAGEMENT PRACTICES**

This Inspection and Maintenance Agreement, made this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, by and between \_\_\_\_\_ (hereafter referred to as the Owner) and City of North Royalton (hereafter referred to as the City), provides as follows:

WHEREAS, the Owner is the fee simple owner and responsible for certain real estate known as \_\_\_\_\_, North Royalton, Ohio (PPN \_\_\_\_\_-\_\_\_\_-\_\_\_\_) that is to be developed or modified and referred to as the Property; and,

WHEREAS the Owner is providing a storm water management system consisting of an underground detention chamber system as shown and described on the attached Storm Water Management Plan; and,

WHEREAS, to comply with the Codified Ordinances of the City, pertaining to this project, the Owner has agreed to maintain the storm water management practices in accordance with the terms and conditions hereinafter set forth.

NOW, THEREFORE, for and in consideration of the mutual covenants and undertaking of the parties, the parties hereby agree as follows:

### **FINAL INSPECTION REPORTS AND AS BUILT CERTIFICATION**

The Owner shall certify in writing to the City within 30 days of completion of the storm water management practices that the storm water management practices are constructed in accordance with the approved plans and specifications. The Owner shall further provide As Built Certifications of the locations of all access and maintenance easements and each storm water management practice, including those practices permitted to be located in, or within 50 feet of, water resources, and the drainage areas served by each storm water management practice.

### **MAINTENANCE PLANS FOR THE STORM WATER MANAGEMENT PRACTICES**

1. The Owner agrees to maintain in perpetuity the storm water management practices in accordance with approved Maintenance Plans listed in #2 below and in a manner that will permit the storm water management practices to perform the purposes for which they were designed and constructed, and in accordance with the standards by which they were designed and constructed, all as shown and described in the approved Comprehensive Storm Water Management Plan. This includes all pipes and channels built to convey storm water to the storm water management practices, as well as structures, improvements, and vegetation provided to control the quantity of the storm water. Owner shall cause the maintenance obligation to be inserted in the chain of title to the affected lands as a covenant running with the land in favor of the City as set forth in N.R.O.1481.08(a), of copy of which shall be provided to the City Law Director.
2. The Owner shall provide a Maintenance Plan for each storm water management practice. The Maintenance Plans shall include a schedule for regular maintenance. The Owner shall maintain, update, and store the maintenance records for the storm water management practices. The specific operations and maintenance criteria for each specific type of storm water management facility are as follows (as applicable):

## (A) DETENTION BASINS

(City of North Royalton Engineering Department, March, 2016)

Detention Basin: a detention basin, also commonly known as a dry pond, is a storm water management facility that temporarily stores incoming storm water, trapping suspended pollutants, and reducing the peak discharge from the site.

**Table 1**  
**Operations and Maintenance Criteria for DETENTION BASINS**

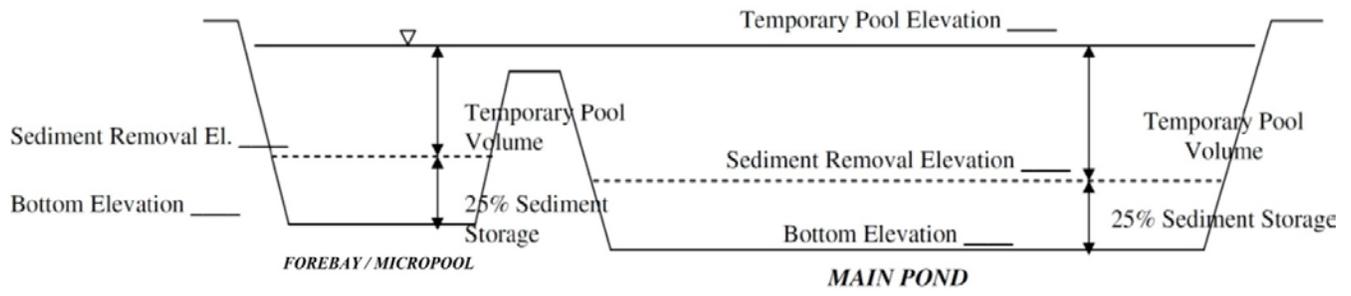
Basin Element	Potential Problem	How to Remediate the Problem
<b>The entire detention basin</b>	Trash/debris is present.	Remove the trash/debris.
<b>The perimeter of the detention basin</b>	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application. Additional stabilization measures may be necessary depending on severity of erosion.
<b>The inlet device: pipe or swale</b>	The pipe is clogged (if applicable).	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged (if applicable).	Replace the pipe.
	Erosion is occurring in the swale (if applicable).	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
<b>The forebay (near inlet) / The micropool (near outlet)</b>	Sediment has accumulated and reduced the depth to 75% of the original design depth (see Diagram 1).	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams, wetlands, or the detention basin.
	Erosion has occurred or riprap is displaced.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.

*Note: Information taken from the North Carolina Department of Environmental and Natural Resources' "Stormwater BMP Manual" rev. date 06-01-09*

**Table 1, continued**  
**Operations and Maintenance Criteria for DETENTION BASINS**

<b>Basin Element</b>	<b>Potential Problem</b>	<b>How to Remediate the Problem</b>
<b>The main treatment area</b>	Sediment has accumulated and reduced the depth to 75% of the original design depth (see Diagram 1).	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams, wetlands, or the detention basin. Revegetate disturbed areas immediately with sod (preferred) or seed protected with securely staked erosion mat.
	Water is standing more than 5 days after a storm event.	Check the outlet structure for clogging. If it is a design issue, consult an appropriate professional.
	Weeds and noxious plants are growing in the main treatment area.	Remove the plants by hand or by wiping them with pesticide (do not spray).
<b>The embankment</b>	Shrubs or trees have started to grow on the embankment.	Remove shrubs or trees immediately.
	Grass cover is unhealthy or eroding	Restore the health of the grass cover, consult a professional if necessary.
	Signs of seepage on the downstream face.	Consult a professional.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
<b>The outlet device</b>	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged.	Repair or replace the outlet device.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the City of North Royalton Engineering Department at (440) 582-3001 so that an assessment can be made.

*Note: Information taken from the North Carolina Department of Environmental and Natural Resources' "Stormwater BMP Manual" rev. date 06-01-09*



**Diagram 1 - Profile of a Detention Basin**

## (B) RETENTION BASINS

(City of North Royalton Engineering Department, March, 2016)

Retention Basin: a retention basin, also commonly known as a wet pond, is a storm water management facility that includes a permanent pool of water for removing pollutants and additional capacity above the permanent pool for storing incoming storm water and reducing the peak discharge from the site.

**Table 2**  
**Operations and Maintenance Criteria for RETENTION BASINS**

Basin Element	Potential Problem	How to Remediate the Problem
<b>The entire retention basin</b>	Trash/debris is present.	Remove the trash/debris.
<b>The perimeter of the retention basin</b>	Areas of bare soil and/or erosive gullies have formed.	Regrade the soil if necessary to remove the gully, and then plant a ground cover and water until it is established. Provide lime and a one-time fertilizer application. Additional stabilization measures may be necessary depending on severity of erosion.
	Vegetation is too short or too long.	Maintain vegetation at a height of approximately six (6) inches.
<b>The inlet device: pipe or swale</b>	The pipe is clogged.	Unclog the pipe. Dispose of the sediment off-site.
	The pipe is cracked or otherwise damaged (if applicable).	Replace the pipe.
	Erosion is occurring in the swale.	Regrade the swale if necessary to smooth it over and provide erosion control devices such as reinforced turf matting or riprap to avoid future problems with erosion.
<b>The forebay (near inlet) / The micropool (near outlet)</b>	Sediment has accumulated to a depth greater than the original design depth for sediment storage (see Diagram 2).	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams, wetlands, or the retention basin.
	Erosion has occurred.	Provide additional erosion protection such as reinforced turf matting or riprap if needed to prevent future erosion problems.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.

Note: Information taken from the North Carolina Department of Environmental and Natural Resources' "Stormwater BMP Manual" rev. date 06-01-09

**Table 2, continued**  
**Operations and Maintenance Criteria for RETENTION BASINS**

<b>Basin Element</b>	<b>Potential Problem</b>	<b>How to Remediate the Problem</b>
<b>The vegetative shelf</b>	Best professional practices show that pruning is needed to maintain optimal plant health.	Prune according to best professional practices.
	Plants are dead, diseased or dying.	Determine the source of the problem (soils, hydrology, disease, etc.). Remedy the problem and replace plants. Provide a one-time fertilizer application to establish the ground cover if a soil test indicates it is necessary.
	Weeds are present.	Remove the weeds, preferably by hand. If pesticide is used, wipe it on the plants rather than spraying.
<b>The main treatment area</b>	Sediment has accumulated to a depth greater than the original design sediment storage depth.	Search for the source of the sediment and remedy the problem if possible. Remove the sediment and dispose of it in a location where it will not cause impacts to streams, wetlands, or the retention basin.
	Algal growth covers over 50% of the area.	Consult a professional to remove and control the algal growth.
	Cattails, phragmites or other invasive plant cover 50% of the basin surface.	Remove the plants by wiping them with pesticide (do not spray).
<b>The embankment</b>	Shrubs have started to grow on the embankment.	Remove shrubs immediately.
	Evidence of muskrat or beaver activity is present.	Use traps to remove muskrats and consult a professional to remove beavers.
	A tree has started to grow on the embankment.	Consult a dam safety specialist to remove the tree.
	An annual inspection by an appropriate professional shows that the embankment needs repair.	Make all needed repairs.
<b>The outlet device</b>	Clogging has occurred.	Clean out the outlet device. Dispose of the sediment off-site.
	The outlet device is damaged.	Repair or replace the outlet device.
<b>The receiving water</b>	Erosion or other signs of damage have occurred at the outlet.	Contact the City of North Royalton Engineering Department at (440) 582-3001 so that an assessment can be made.

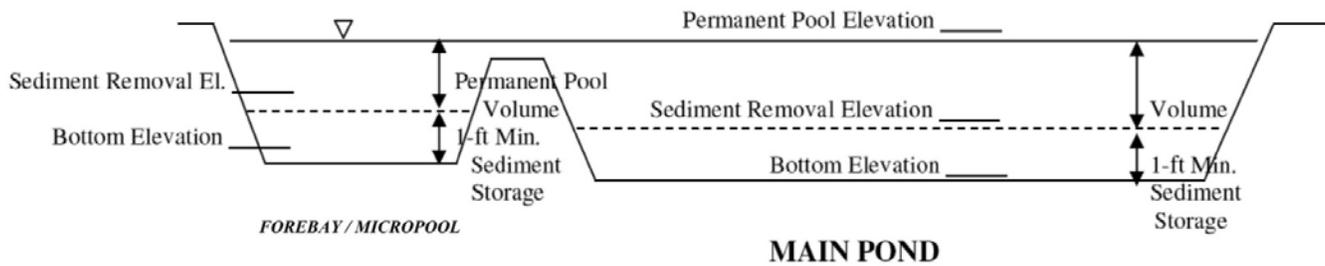
*Note: Information taken from the North Carolina Department of Environmental and Natural Resources' "Stormwater BMP Manual" rev. date 06-01-09*

**Retention Basin Clean-Out - REFERENCE**

The measuring device used to determine the sediment elevation shall be such that it will give an accurate depth reading and not readily penetrate into accumulated sediments.

When the permanent pool depth reads \_\_\_\_\_ feet in the main pond, the sediment shall be removed.

When the permanent pool depth reads \_\_\_\_\_ feet in the forebay, the sediment shall be removed.



**Diagram 2 - Profile of a Retention Basin for Clean-Out** (fill in the blanks)

*Note: Information taken from the North Carolina Department of Environmental and Natural Resources' "Stormwater BMP Manual" rev. date 06-01-09*

### (C) UNDERGROUND DETENTION BASINS

(City of North Royalton Engineering Department, March, 2016)

Underground Detention Basin: an underground detention basin is a below-grade storm water management facility that temporarily stores incoming storm water, trapping suspended pollutants, and reducing the peak discharge from the site.

**Table 3**  
**Operations and Maintenance Criteria for UNDERGROUND DETENTION BASINS**

<b>Basin Element</b>	<b>Routine Inspection Item - to be completed SEMI-ANNUALLY*</b>
<b>Underground storm chamber or piping system</b>	Perform visual inspection for sediment accumulation. A. Remove cover/lid from access structure. B. Remove cap from inspection riser. C. Measure the depth of the sediment using a flashlight and stadia rod. Follow standard OSHA procedures for entering a confined space. A camera or mirrors on poles may be used to avoid confined space entry. If sediment level is 3 inches or more above the side walls or ground level: 1. Clean out isolator row (if applicable). a. Use a pressurized clean water system (i.e. a hose with adjustable nozzle or a JetVac process). b. Perform multiple passes where sediment has accumulated until backflush water is clean. c. Vacuum as required to remove accumulation from the chamber system or nearby structures. d. Replace all caps, lids and covers. Record observations and any maintenance performed. 2. Clean storm structures upstream of the chamber system.

\* Storm water maintenance may need to be increased due to previous site inspection findings on sediment accumulation, site specific conditions, or weather conditions. These recommendations for an underground detention system are to be superseded by any manufacturer's recommendations that exceed these minimum measures. The manufacturer's recommendations shall be added to the Agreement.

3. Maintenance Plans for all Storm Water Management Practices with decentralized design criteria shall be drawn up to comply with the latest edition of the Ohio Department of Natural Resources Division of Soil and Water Conservation "Rainwater and Land Development Manual".

## INSPECTION AND REPAIRS OF STORM WATER MANAGEMENT PRACTICES

1. The Owner shall inspect all storm water management practices listed above, every three (3) months and after major storm events for the first year of operation.
2. The Owner shall inspect all storm water management practices listed above at least once every year thereafter.
3. The Owner shall submit Inspection Reports in writing to the Community within 30 days after each inspection. The reports shall include the following:

The Date of Inspection: \_\_\_\_\_

Name of Inspector: \_\_\_\_\_

The Condition and/or Presence of:

(i) \_\_\_\_\_

(ii) \_\_\_\_\_

(iii) \_\_\_\_\_

(iv) \_\_\_\_\_

(v) \_\_\_\_\_

(vi) \_\_\_\_\_

(vii) \_\_\_\_\_

(viii) Any other item that could affect the proper function of the Facility.

4. The Owner grants permission to the City to enter the Property and to inspect all aspects of the storm water management practices and related drainage whenever the City deems necessary. The City shall provide the Owner copies of the inspection findings and a directive to commence with the repairs if necessary.
5. The Owner shall make all repairs within 30 days of their discovery through Owner inspections or through a request or notice of violation from the City pursuant to N.R.C. O. 1481.08(f). If repairs will not occur with this 30 day period, the Owner must receive written approval from the City engineer for a repair schedule.
6. In the event of any default or failure by the Owner in the performance of any of the covenants and warranties pertaining to the maintenance of the storm water management practices, or the Owner fails to maintain the storm water management practices in accordance with the approved design standards and Maintenance Plan, violation of any ordinance, law, regulation or rule, or, in the event of an emergency as determined by the Community, it is the sole discretion the City, after providing reasonable notice to the Owner, to enter the property and take whatever steps necessary

to correct deficiencies and to charge the cost of such repairs to the Owner. The Owner shall reimburse the City upon demand, within thirty (30) days of receipt thereof for all actual cost incurred by the City. All costs expended by the City in performing such necessary maintenance or repairs shall constitute a lien against the properties of the Owner in accordance with N.R.O. 1481.08(f) and with Ohio law. Nothing herein shall obligate the City in any manner or under any circumstances to the Owner or third parties, including but not limited to, the maintenance of the storm water management practices.

## **INDEMNIFICATION**

The Owner hereby agrees that it shall save, hold harmless, and indemnify the City and its employees and officers from and against all liability, losses, claims, demands, costs and expenses arising from, or out of, default or failure by the Owner to maintain the storm water management practices, in accordance with the terms and conditions set forth herein, or from acts of the Owner arising from, or out of, the construction, operation, repair or maintenance of the storm water management practices.

The parties hereto expressly do not intend by execution of this Inspection and Maintenance Agreement to create in the public, or any member thereof, any rights as a third party beneficiary or to authorize anyone not a party hereof to maintain a suite for any damages pursuant to the terms of this Inspection and Maintenance Agreement.

This Inspection and Maintenance Agreement shall be a covenant that runs with the land and shall insure to the benefit of and shall be binding upon the parties hereto, their respective successors and assigns, and all subsequent owners of the property.

The current Owner shall promptly notify the City when the Owner legally transfers any of the Owners responsibilities for the storm water management practices. The Owner shall supply the City with a copy of any document of transfer, executed by both parties.

Upon execution of this Inspection and Maintenance Agreement, it shall be recorded in the Clerk's Office of the Cuyahoga County Recorder's Office, at the Owner's expense.

IN WITNESS WHERE OF, The Owner has caused this Inspection and Maintenance Agreement to be signed in its names by a duly authorized person.

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Owner's Signature

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Owner's Printed Name

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Appropriate City Official